NASA Ames Research Center
Climate Change Adaptation Symposium
Developing an Adaptation Strategy for S. SF Bay
U.S. Army Corps of Engineers-SF Dist., Perspective

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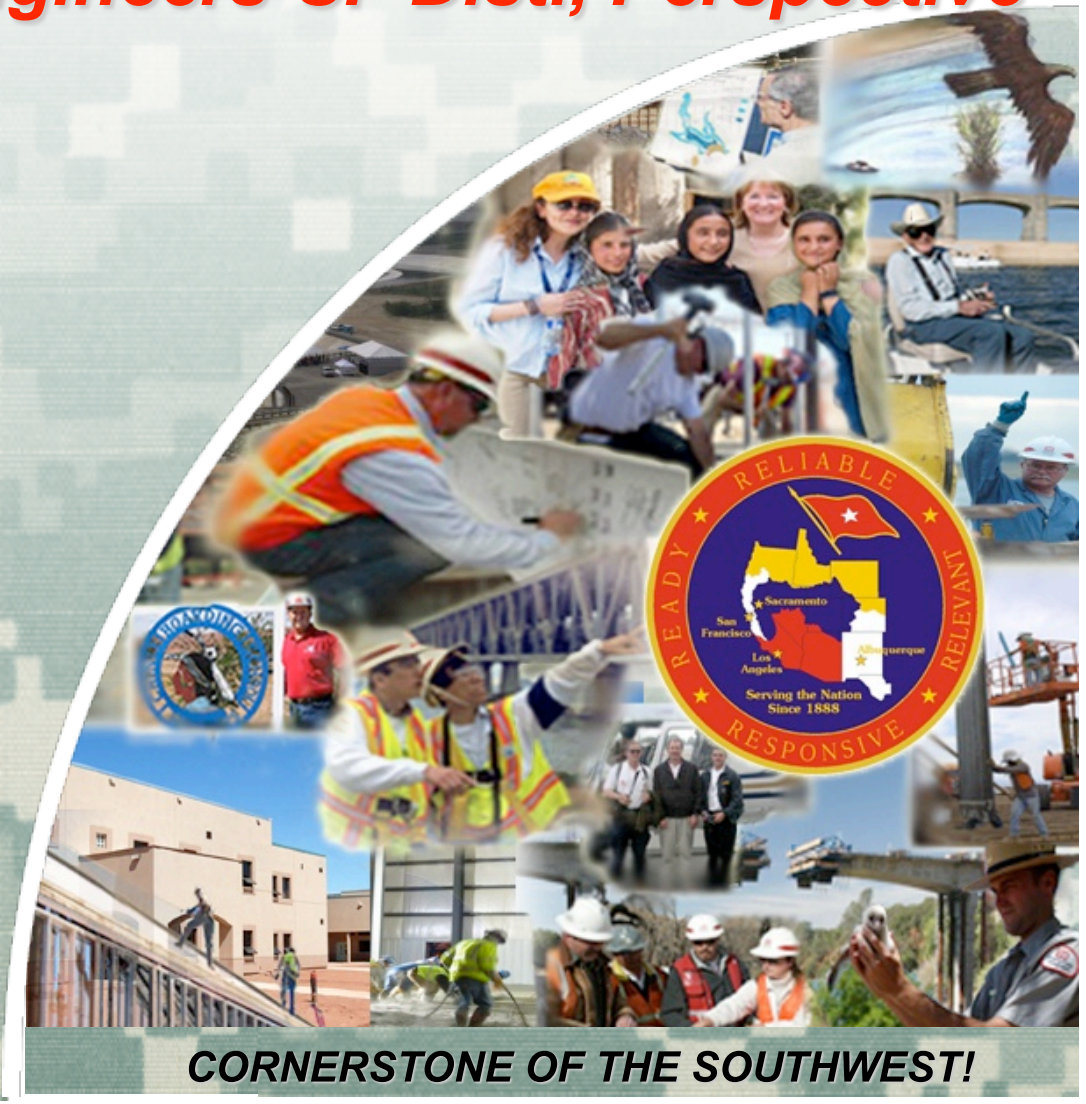
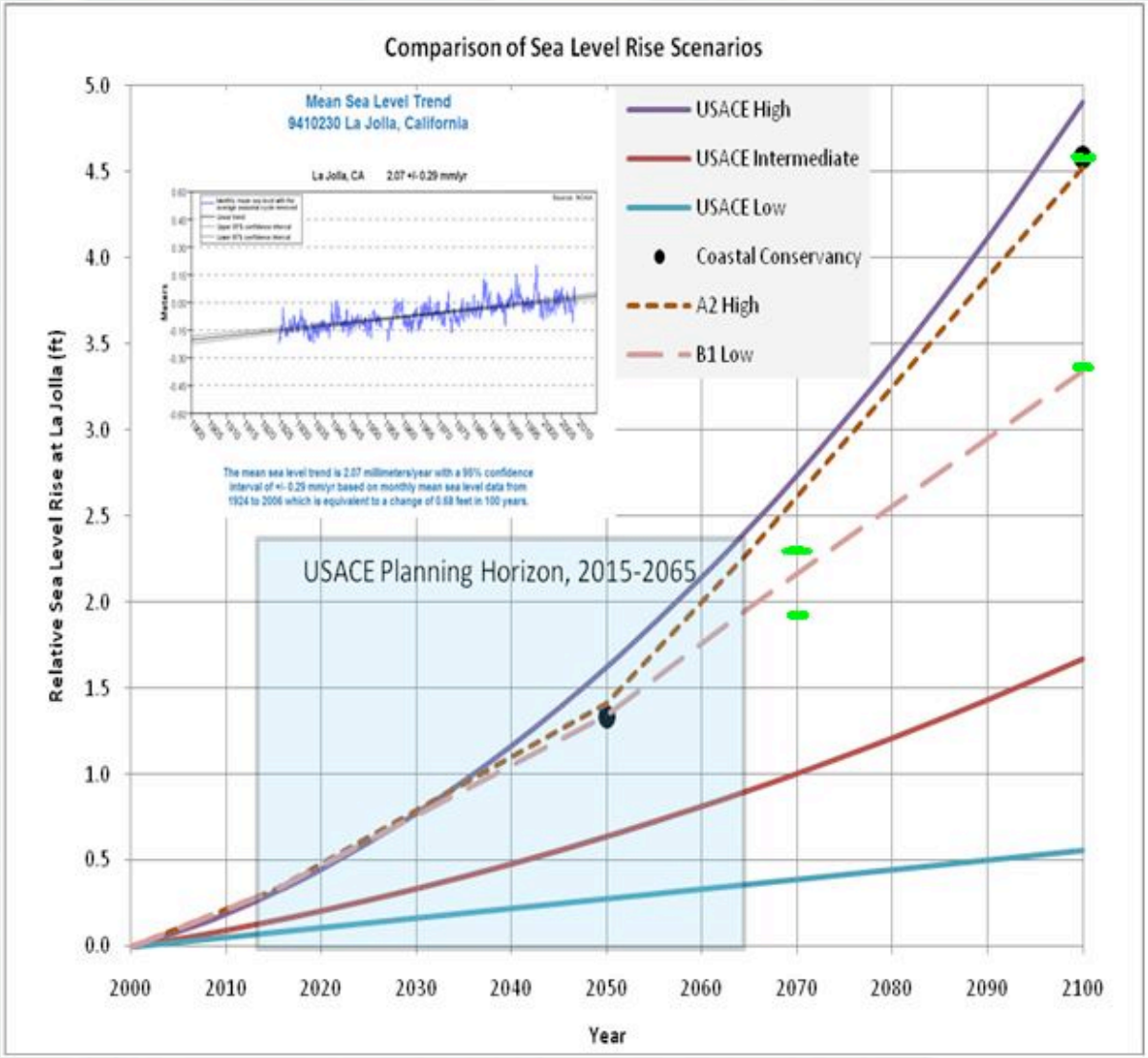


CORNERSTONE OF THE SOUTHWEST!

US Army Corps of Engineers
BUILDING STRONG®

Sea Level Change Planning

- EC 1165-2-211 1 July 2009
- Use Multiple Scenario Approach
- High: modified NRC 1987 curve III
- Intermediate: modified NRC 1987 curve I
- Low: historical trend

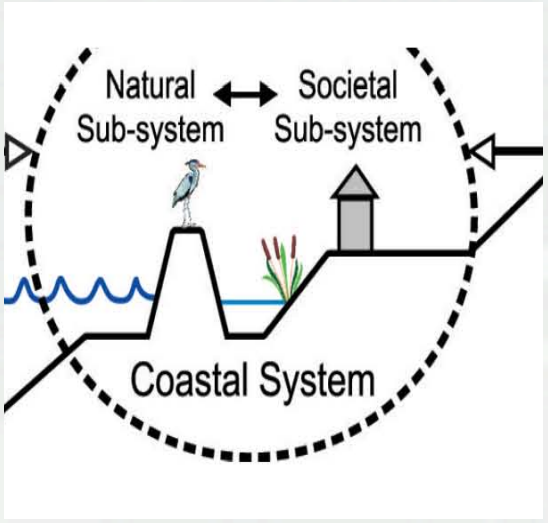


MULTIPLE SCENARIO APPROACH

- Philosophy:
  - **We can't predict the future without uncertainty**
  - **Be prepared to implement flexible planning and engineering adaptations accounting for a range of possible changes**
  - **Must be able to recognize meaningful changes that may require additional response**
- Scenario predictions are based on fundamentally different assumptions about the processes
  - **Inappropriate to combine different scenarios into a single prediction, then calculate an error distribution about it**
  - **Scenarios should not be considered better or worse, must develop alternatives for each**
  - **Different alternative plans can be evaluated as being better or worse than others for the range of future scenarios**
- Consider and seek to minimize the risk associated with multiple sea-level rise scenarios (Least Regrets Approach)

Alternatives Development & Selection

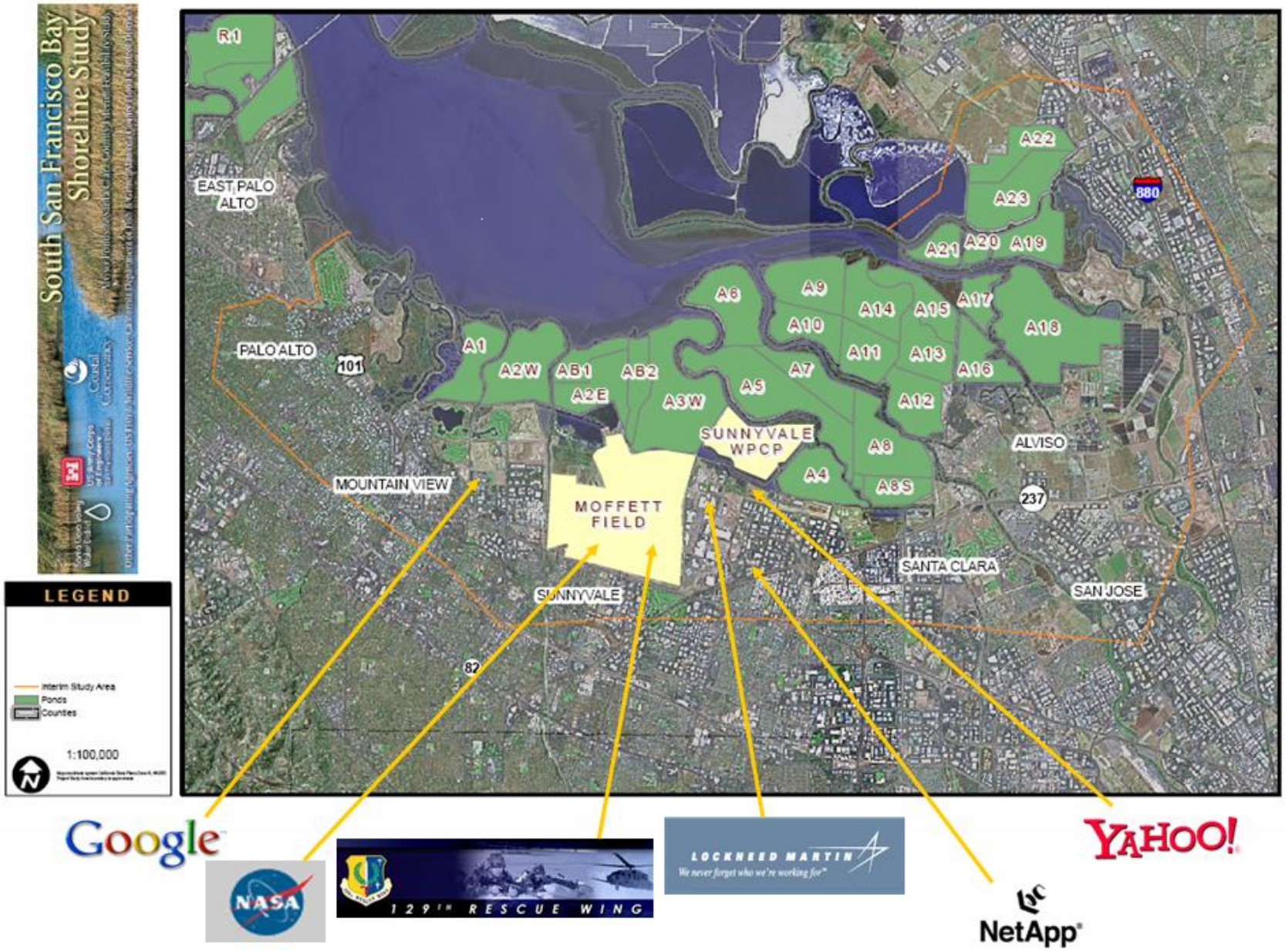
- Adaptive Management
- Facilitate Future Modifications
- Design for the Future



	Scenario 1	Scenario 2	Scenario 3
Alt A	☺	-2	-20
Alt B	-1	☺	-5
Alt C	-10	-6	☺

SOUTH SF BAY SHORELINE STUDY

- Feasibility Study Effort Began in 2005
- Partners: Federal and Non-Federal
  - USACE, SCVWD, CA Coastal Conservancy
- Purpose: Evaluate and compare alternatives to reduce the risk of flood damages, and to develop measures to improve the environment
- Study Completion and Approval Necessary for Project Authorization
- Current Efforts: Rescope & Alternatives Analysis
- www.southbayshoreline.org


South San Francisco Bay Shoreline Study
LEGEND
Interim Study Area
Ponds
Counties
1:100,000
R1
EAST PALO ALTO
PALO ALTO
101
MOUNTAIN VIEW
MOFFETT FIELD
SUNNYVALE
SUNNYVALE WPCP
ALVISO
SANTA CLARA
SAN JOSE
237
880
82
A1
A2W
AB1
AB2
A2E
A3W
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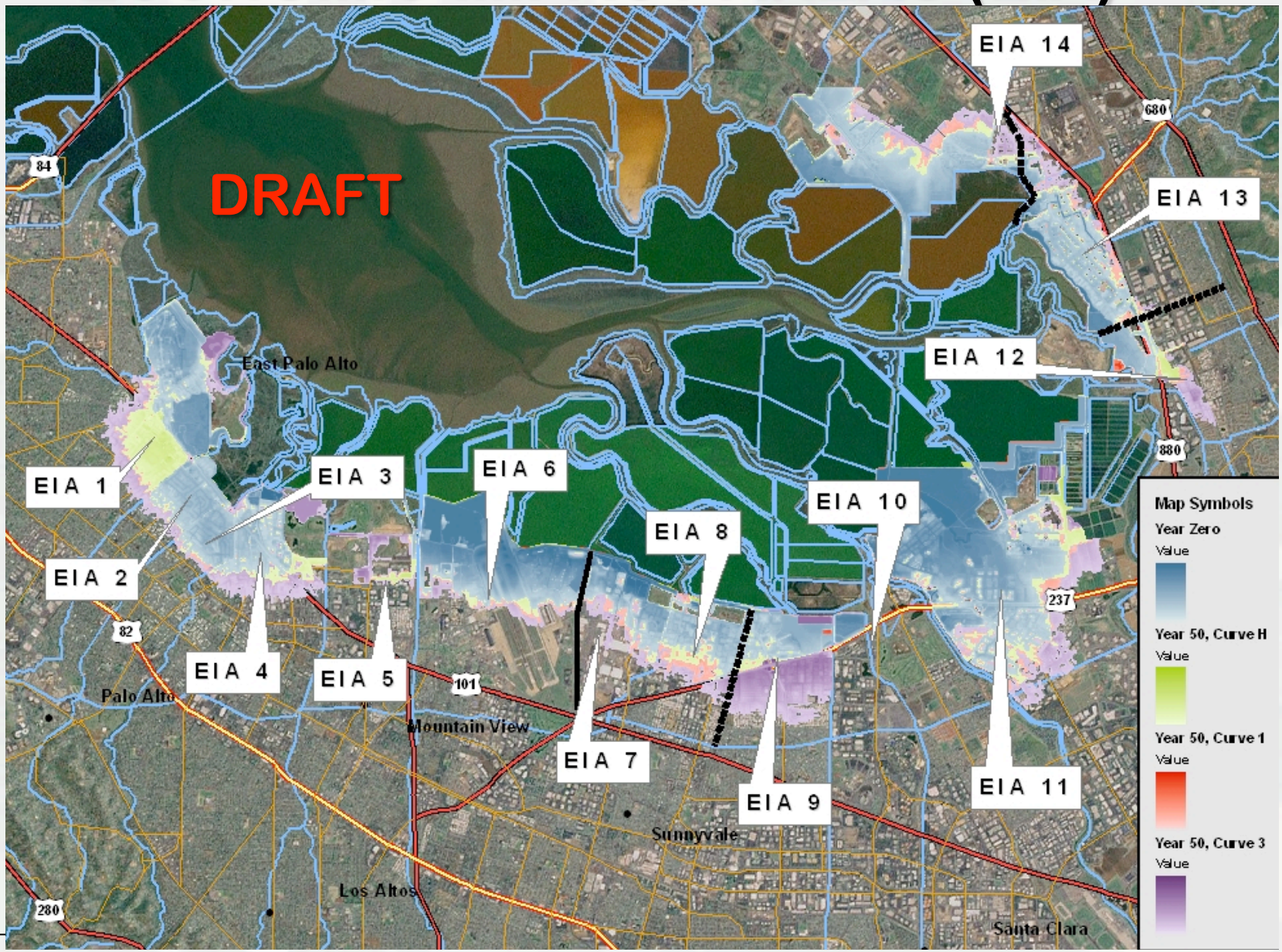
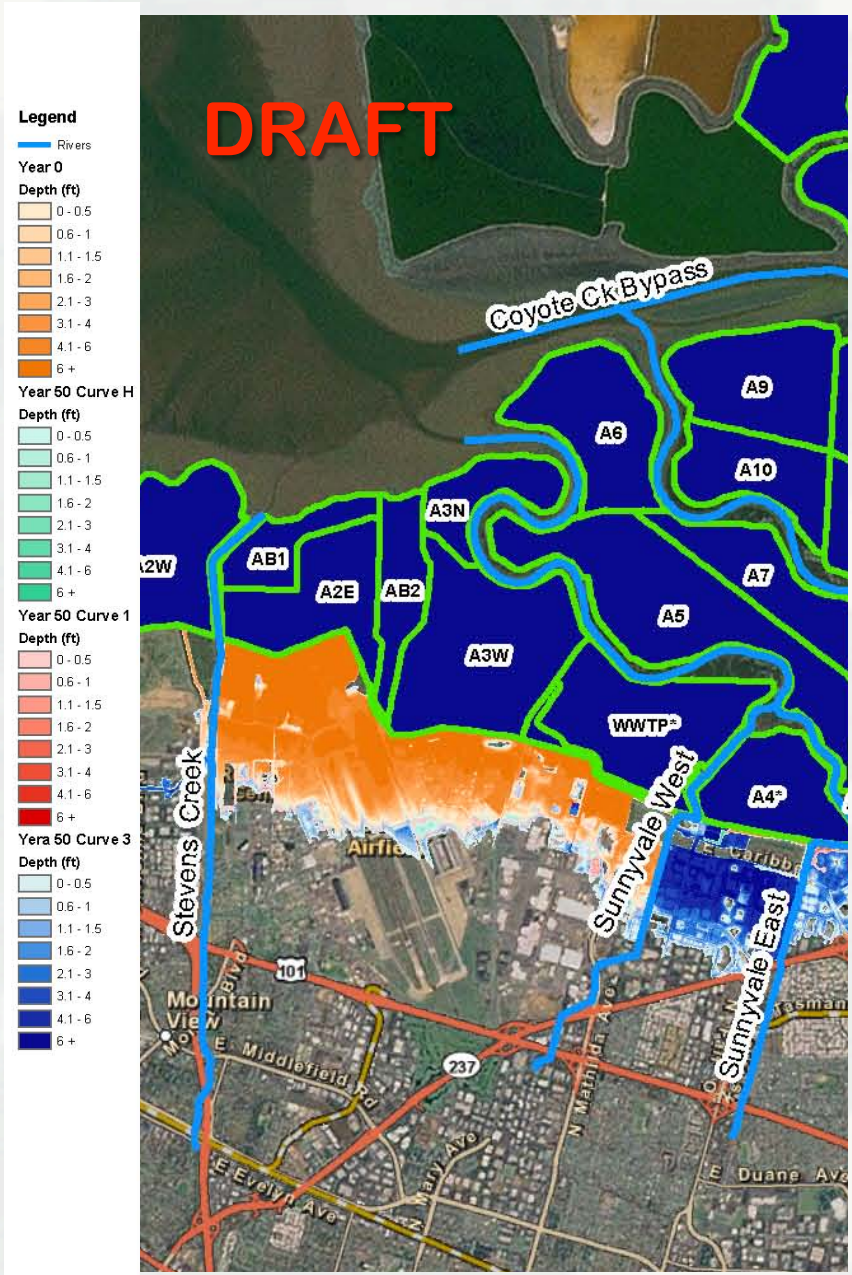
NASA
129TH RESCUE WING
LOCKHEED MARTIN
We never forget who we're working for™
YAHOO!
NetApp

ECONOMIC IMPACT AREAS (EIA)



RESULTS FOR EIA 6 (NASA AMES AREA)

- Results shown for the 1% annual chance flood (baylands flooding not shown)
- Most infrastructure at Ames is above flood level, but operations may be affected
- Effect of Sea Level Rise is minor, with slight increase under NRC curve III scenario



CORPS PARTNERING

- **San Francisco Bay Joint Venture (SFBJV) -- protect, restore, and enhance wetlands, riparian habitat, and associated uplands throughout the San Francisco Bay region (SFBJV is a partner of BAECCC).**
- **Coastal Sediment Management Workgroup (CSMW) -- facilitate regional approaches to protect, enhance, and restore coastal beaches and watersheds through federal, state, and local cooperative efforts (works on RSM plans).**
- **Long Term Management Strategy (LTMS) -- Multi-Agency group addressing dredging activities in SF Bay to maintain navigation in an economically and environmentally sound manner, maximize beneficial use of dredged material, and establish cooperative permitting framework.**

CORPS COLLABORATIONS

Formal Efforts

- CA-OR-WA NRC update of Sea Level Change
- Regional Sediment Management (RSM) -- sediment transport model with USGS & USBR
- Work Plan for Federal Agencies Participation in SLC studies in SF Bay (Draft Nov 2009)

Informal Coordination

- Floodplain mapping studies with FEMA
- LIDAR surveys (multi-agency)

❖ Corps wants to partner & leverage the expertise and resources from local, State, and Federal agencies for its best use within the bay

QUESTIONS

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Thanks to: Tom Kendall and Mark Bierman